

# A STUDY ON PREVALENCE OF REPRODUCTIVE TRACT INFECTION SEXUALLY TRANSMITTED INFECTIONS AND ITS DETERMINANTS IN ADULT POPULATION OF KANPUR NAGAR

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## ABSTRACT

### INTRODUCTION

Reproductive tract infection is a broad term that includes sexually transmitted infections (STIs) as well as other infections of the reproductive tract or reproductive tract infections (RTI) that are not transmitted through sexual intercourse. Thus reproductive tract infections (RTIs) include three types of infection: 1) Sexually transmitted diseases (STDs), such as chlamydia, gonorrhea, chancroid, and human immunodeficiency virus (HIV), 2) Endogenous infections, which are caused by overgrowth of organisms normally present in the genital tract of healthy women, such as bacterial vaginosis or vulvovaginal candidiasis and 3) Iatrogenic infections, which are associated with improperly performed medical procedures such as unsafe abortion or poor delivery practices. According to World Health Organization (WHO),<sup>1</sup> Global estimates in 2005 was 448 million new cases of curable STIs (syphilis, chlamydia, gonorrhea, and trichomoniasis) occur annually in adults aged 15-49 years. In India, the annual incidence of STIs is estimated to be 5%. The prevalence of self-reported morbidity varies in different regions of India. Many community-based studies in India have shown the prevalence of RTIs to range from 39% to 84%.

### OBJECTIVES

- To study the prevalence of RTIs in study subjects.
- To study determinants of RTIs in study subjects.

### MATERIAL AND METHODS

A cross-sectional study conducted among adult population (>18 years) in the area served by RHTC, Kalyanpur,

*Kanpur. A Predesigned and pre-tested questionnaire was used to record data about the biosocial profile, knowledge and their treatment seeking behavior regarding RTIs. Data was entered in excel sheet and appropriate statistical tools were used to analyze data.*

### **RESULTS**

*Prevalence of RTIs in female study subjects were 26.56% and 12.08% in male subjects. Maximum (85.57%) of symptomatic male subjects was not bathing daily. Maximum (71.43%) symptomatic male subjects were not cleaning private parts daily. RTIs are significantly associated with hygienic practices and were found statistically significant. CONCLUSIONS*

*RTI is more prevalent in women as compared to men. More emphasis should be given on IEC touching the areas like mode of transmission of RTIs, healthy, hygienic practices clinical manifestations, their impact on health and how to enhance the use of government health services for treatment of RTIs.*

**KEYWORDS:** *Infections, Sexually, Women, RTIs, STIs & Health*

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## **INTRODUCTION**

Reproductive tract infection is a broad term that includes sexually transmitted infections (STIs) as well as other infections of the reproductive tract or reproductive tract infections (RTI) that are not transmitted through sexual intercourse. Thus reproductive tract infections (RTIs) include three types of infection: 1) Sexually transmitted diseases (STDs), such as chlamydia, gonorrhea, chancroid, and human immunodeficiency virus (HIV), 2) Endogenous infections, which are caused by overgrowth of organisms normally present in the genital tract of healthy women, such as bacterial vaginosis or vulvovaginal candidiasis and 3) Iatrogenic infections, which are associated with improperly performed medical procedures such as unsafe abortion or poor delivery practices.

In women, RTIs includes infections of the outer genitals, vagina, cervix, uterus, tube, or ovaries. In men, RTIs involves the penis, testes, scrotum, or prostate. RTIs are preventable and many are treatable as well. RTIs are a group of communicable diseases prevalent globally, more so in developing countries, transmitted predominantly by sexual contact and caused by a wide range of organisms. The problem of RTI in the adult population is attributed largely to lack of knowledge, ignorance, sub-standard living conditions, and poor personal and reproductive health. According to World Health Organization (WHO),<sup>1</sup> Global estimates in 2005 was 448 million new cases of curable STIs (syphilis, chlamydia, gonorrhea, and trichomoniasis) occur annually in adults aged 15-49 years. In India, the annual incidence of STIs is estimated to be 5%. The prevalence of self-reported morbidity varies in different regions of India. Many community-based studies in India have shown the prevalence of RTIs to range from 39% to 84%. Earlier studies have reflected upon various factors influencing the occurrence of RTIs mainly poor hygiene, socioeconomic status, extra-marital sexual relations, intra-uterine device (IUD) insertion, place of residence (urban/rural), male substance abuse, and non-use of condoms. Although many studies have been conducted in various parts of the country with the aim to document the prevalence of STIs/RTIs and its risk factors, yet there is a lack of sizeable literature from urban slums and resettlement areas. The current study was undertaken to fill these existing lacunae.

- To study the prevalence of RTIs in study subjects.
- To study determinants of RTIs in study subjects.

## **MATERIAL AND METHODS**

The present study entitled “A Study on knowledge and treatment seeking behavior regarding Reproductive Tract Infections in the adult population of Kanpur Nagar” was carried out to identify the determinants of reproductive tract infection and its prevalence in the adult population of Kanpur Nagar.

A Study was a cross-sectional study and duration of the study was July 2016 to August 2017. Study Population was all adults >18years of age (Male and Female) population residing in the geographical units of the selected area of Kanpur Nagar.

### **Sample Size**

$$n = \frac{Z^2PQ}{d^2}$$

Where Z= Standard normal variance and value of Z at 95% Confidence Interval is 1.96

**P** is the Prevalence % of reproductive tract infections (6%) which has been calculated on the basis of Pilot survey.

**Q** is (100-P) % = 94% and **d** is a margin of error which has been taken at 2% (absolute) with respect to variation in Prevalence of Diabetes Mellitus in different areas.

$$n = \frac{1.96 \times 1.96 \times 6 \times 94}{2 \times 2}$$

$$= 541.6$$

600 adults (male and female) of age more than 18 years.

The minimum sample size 600 was calculated assuming the survey, prevalence of **6% of RTI/STI (2003)** cases among Indian adult population was taken as per NACO report on RTI/STI SERVICES updated up to 20 Jan 2016<sup>2</sup>. As fluctuation in prevalence rate is marginalized due to different health programs of NACO, 2% absolute margin of error is taken for the calculation of sample size.

## **METHODOLOGY**

To select the sample population multistage random sampling technique was applied. In the first stage of sampling, one ward was selected out of a list of 110 wards of Kanpur Nagar using simple random sampling technique. In the second stage of sampling four areas (Mohallas) were selected out of 24 areas (Mohallas) of that ward using simple random sampling without replacement technique.

In a first part general information was recorded regarding bio-social profile from an individual through the direct personal interview. Then specific information regarding RTI was asked and recorded using syndromic approach.

All questions were asked in a specific order for covering the various objectives. On the basis of history and response given by the individual suspected case of RTI syndrome were shortlisted and shortlisted individuals were asked to visit nearest PHC for proper examination and confirmation of diagnosis and directed accordingly.

## STATISTICAL ANALYSIS

The data were collected and entered into Microsoft Excel Software. An analysis was done using different statistical tools like percentages; measures of central tendency, chi-square test for independence of attribute etc and conclusions were drawn accordingly.

**Table 1: Gender Wise Distribution of Asymptomatic and Symptomatic Study Subjects**

Sex	Total		Asymptomatic		Symptomatic	
	No.(600)	%	No.(479)	%	No.(121)	%
Male	265	44.17	233	87.92	32	12.08
Female	335	55.83	246	73.43	89	26.56

$$\chi^2 = 19.3, \text{C.I.}=95\%, \text{d.f.}=1, p < 0.05$$

**Table 2: Comparison of Hygienic Practices Among Symptomatic and Asymptomatic Male Subjects**

Hygienic Practices	Total (265)	Asymptomatic (233)		Symptomatic (32)		C.I.=95%, d.f.= 1,
		No.	%	No.	%	
Taking bath daily	Yes	232	89.92	26	10.08	$\chi^2=36.72$ , $p < 0.05$
	No	01	14.29	06	85.71	
Cleaning of private parts daily	Yes	225	94.94	12	05.06	$\chi^2=103.88$ $p < 0.05$
	No	08	28.57	20	71.43	

**Table 3: RTIs in Relation to Hygienic Practices among Female Study Subjects**

Hygienic practices	Total (335)	Asymptomatic (246)		Symptomatic (89)		C.I.=95%, df= 1
		No.	%	No.	%	
Taking bath daily	Yes	245	75.38	80	24.62	$\chi^2=21.26$ $p < 0.05$
	No	01	10	9	90.00	
Cleaning of private parts daily	Yes	244	81.06	57	18.94	$\chi^2=88.51$ $p < 0.05$
	No	02	05.88	32	94.12	
Taking bath daily during menses	Yes	244	76.25	76	23.75	$\chi^2=37.08$ $p < 0.05$
	No	00	00	13	100	
Cleaning of private parts daily during menses	Yes	246	79.10	65	20.90	$\chi^2=71.46$ $p < 0.05$
	No	00	00	24	100	

**Table 4: RTIs in Relation to Family Planning Practices**

Family Planning Practices	Total (N=600)	Asymptomatic (479)		Symptomatic (121)	
		No.	%	No.	%
Oral contraceptive pills	234	202	86.32	32	13.68
Copper T	28	23	82.14	05	17.86
Condom	285	264	92.63	21	07.37
Injectables (DMPA)	09	07	77.78	02	22.22
Emergency Contraception	104	82	78.85	22	21.15
Male/Female sterilization	48	38	79.17	10	20.83
No method used	168	122	72.62	46	27.38

\*Multiple responses

Prevalence of RTIs in female study subjects were 26.56% and 12.08% in male subjects. Females are more prone to RTIs and this was found statistically significant (**Table 1**). Maximum (85.57%) of symptomatic male subjects was not bathing daily. Maximum (71.43%) symptomatic male subjects were not cleaning private parts daily. There was the association between hygienic practices and prevalence of RTIs in study subjects and this observation was found to be statistically significant ( $p < 0.05$ ) with respect to taking bath daily & cleaning private parts daily (**Table 2**). RTIs are significantly associated with hygienic practices. There was an association between hygienic practices and asymptomatic subjects and this observation was found to be statistically significant ( $p < 0.05$ ) with respect to taking bath daily, cleaning private parts daily, taking bath daily during menstruation and cleaning of private parts daily during menstruation (**Table 3**). Among the study, subjects using OCP (86.32%) were asymptomatic and 13.68% were symptomatic. Among the study, subjects using copper T (82.14%) were asymptomatic while 17.86% were symptomatic. Among condom users, 92.63% subjects were asymptomatic and 7.37% were symptomatic. Among the injectable (DMPA) users, 77.78% were asymptomatic while 22.22% were symptomatic. Among the study subjects not using any method for contraception, 72.62% were asymptomatic while 27.38% were symptomatic. Use of contraceptive decreases presence of RTIs ( $p < 0.05$ ) (**Table 4**).

## DISCUSSIONS

Overall Prevalence of RTIs found 20.17% in which prevalence of RTIs among males was identified as 12.08%. Martolia D.S. et al.<sup>3</sup> observed in their study in the slum population of Lucknow through the syndromic approach that overall prevalence amongst males and females was 14.7%. The prevalence of STD's was higher in males (16.4%). Uppal Y et al (2007)<sup>4</sup> in their study reported the prevalence of reproductive morbidity amongst males in an urban slum of north India 76 (29.2%) in study subjects and of this sexually acquired morbidity accounted for 21.2% cases. A study conducted by Amrita Samantha et al (2011)<sup>5</sup> found a prevalence of reproductive tract infection/sexually transmitted infections symptomatic: A cross-sectional study in West Bengal observed that a total 102 subjects (13.7%) reported symptoms suggestive of RTI / STI in the last 12 months, of which 48 (13.9% among) were male. The findings of the above studies are very much similar to the present study and are in close conformity of the present study. Among female respondents, the prevalence of RTI was identified as 26.57%. Patel V et al (2006)<sup>6</sup> conducted a study on the burden and determinants of reproductive tract infections in Goa found the overall burden of RTIs was high (28.30%), K. Ray et al.<sup>7</sup> reported in their study the prevalence of RTI/STI agents and HIV infection in symptomatic and asymptomatic women attending peripheral health set-ups in Delhi was 24.30%. Yasmin S, et al.<sup>8</sup> a study in Hoogly, West Bengal found that the RTI prevalence was 23.60%. Ganju SA et al.<sup>9</sup> in their study the initial assessment of scaled-up sexually transmitted infection intervention in Himachal Pradesh under National AIDS Control Program – III reported prevalence of 25.10%.

In the present study majority (85.57%) of the symptomatic male cases were not taking a bath or cleaning private parts daily 71.43%. A significant association was found between various hygienic practices and symptomatic cases of RTIs. In female cases majority (90%) of the symptomatic was not taking bath or cleaning private parts (94.12%). All the female study subjects (100%) who was not taking bath daily and cleaning their private parts during menses were symptomatic. These findings are almost similar to that of Garg S et al.<sup>10</sup> who reported that all the symptoms were more in women not washing genitals daily. Acharya et al.<sup>11</sup> in their study in rural Haryana found that the Majority of the females (95.3%) cleaned their private parts during menstruation. Bhilwar M et al (2015)<sup>12</sup> in their study in an urban slum of north-east Delhi found the majority of the study subjects took bath daily and most of the cases were not taking bath daily (OR 1.4) and not cleaning private parts daily (OR 1.6).

In the present study majority (58.21%) of women were using cloth (clean cloth, any cloth, reused cloth) during menses and out of this 10.77% were reusing it after washing (Table 3). Our findings were inconformity with the findings of Acharya et al (2006)<sup>11</sup> who observed in their study in rural Haryana that 87.6 % women used clothing for sanitary protection. Out of those who used cloth (10.66%) reused after changing layers & (9.33%) women reused it after washing. As more than half of women were suffering from vaginitis, use of homemade cloth which was not clean may be an important cause of RTI in their study. B. Sri Devi et al (2007)<sup>13</sup> also in their study among reproductive age women (15-49 years) found prevalence was observed to be higher in those with unhygienic menstrual practices. Philip P S et al (2013)<sup>14</sup> in a study in Ludhiyana found the prevalence of symptoms to be higher (20.7%) in those who used ordinary cloth during menstruation as compared with those who used sanitary pads. The association between the occurrence of disease and re-use of cloth during menses by the symptomatics is found to be statistically significant.

## CONCLUSIONS

The majority of study subjects (47.50%) used condoms as a family planning method and of these only 07.70% were symptomatic. The symptomatic were higher among subjects using emergency pills, injectables and IUCD as a method of contraception, being 21.12%, 22.22% & 17.86% respectively for each group (Table 4). Parasher A et al (2006)<sup>15</sup>, B. Sri devi et al (2007)<sup>13</sup>, Savita Sharma et al (2009)<sup>16</sup> and Sangeetha S Balamurugan et al (2012)<sup>17</sup> also reported a higher occurrence of RTI in women using IUCD. Uppal Y et al (2017)<sup>4</sup> in their study on the prevalence of reproductive morbidity amongst males in an urban slum of North India found that Contraceptive users have a lesser prevalence (38.6%) of RTI symptoms as compared to nonusers (54%).

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